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COMPLETE SPECIFICATION.

Improvements in Elastic Tyres.

I, HEINRICH HARTMANN, of No. 32, rue des Rentiers, Etterbeek-Brüssel, Belgium, Engineer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

5 This invention relates to elastic tyres for vehicle wheels, of the type comprising a series of circumferentially arranged resilient sections held in position upon an outer rim by means of metal or other fastening devices.

The present invention consists in an elastic tyre of this type, in which each of the resilient sections is provided with a single metal fastening device which  
10 is formed with an enlarged end and is adapted to engage in a recess, which is before fixing of considerably smaller dimensions and is disposed in the central and inner portions of the tyre sections formed of solid blocks of rubber, preferably of spherical shape, so that the portions of the sections surrounding the fixing device are caused to automatically grip the latter on all sides with great  
15 pressure, thereby rendering unnecessary the provision of any means for preventing lateral movement of the tyre.

One construction of tyre according to this invention is illustrated by way of example in the accompanying drawings in which:—

Figure 1 is a longitudinal section of a rubber ball with the adjacent portion  
20 of the wheel felloe, and

Figure 2 is a side view of a portion of the wheel felloe with a number (three) of rubber balls fixed thereon.

As shown, 1 is a wooden felloe on which is fixed an iron rim 2 without side rims or flanges. The rim and felloe are pierced with equally spaced holes to  
25 receive the requisite number of rubber balls. Each ball is provided with a metal preferably hollow fixing device 3 that is attached to the rim or felloe by means of a nut 4.

The outer portion 5 of each fixing device is arranged at an angle to the radius of the wheel as shown, so that as the wheel revolves in the forward direction, the centre line of the fixing device will bear at right angles upon the ground and thus enable the ball to take its load under the most favourable conditions. For the purpose of fixing this position each fixing device is provided with a nose 6. The outer portion 5 of the fixing device terminates in a rounded  
30 enlargement 7 which engages in a correspondingly hollowed portion of the rubber ball 8 and thus holds the latter securely on the wheel felloe.

The cavity of the rubber ball is sufficiently large to comprise, in addition to that surrounding the enlargement 7, an outer cavity 9 which will allow the outer portions of the rubber ball to yield freely to the action of the load or blows. The inner portion of the cavity in the rubber ball that surrounding the  
40 outer portion 5 of the fixing device as well as the portion of the cavity surrounding the enlargement 7 are made sufficiently narrow to ensure that the rubber shall grip the fixing device with great pressure on all sides.

10 is a hole extending through the entire outer thickness of the rubber ball; it provides in combination with the fixing device which is hollow throughout,

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*Hartmann's Improvements in Elastic Tyres.*

an unobstructed passage for the flow of air through the ball during the progress of the vehicle wheel, so that a strong cooling action is thereby produced upon the rubber ball.

The fixing device is mounted elastically in the hole in the wheel felloe for the purpose of preventing the outer rubber parts from striking the fixing device 5 on the occurrence of violent jolts.

For this purpose a rubber ring 11 is arranged in the enlarged outer part of the hole in the felloe, and a rubber washer 12 is provided under the nut 4. In the "rest position" (shown in Figure 1) of the rubber ball, this washer 12 is compressed by the pressure exerted by the rubber ball upon the fixing device. 10

On the occurrence of a violent jolt, the impact of the inner edge of the fixing device 5 is absorbed by the rubber ring 11; the fixing device being caused to return resiliently into its original position by the action of the rubber ring 11 and washer 12.

Having now particularly described and ascertained the nature of my said 15 invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. An elastic tyre of the type referred to, for the wheels of motor cars and other vehicles, in which each of the resilient sections is provided with a single metal fastening device which is formed with an enlarged end and is adapted 20 to engage in a recess, which is before fixing of considerably smaller dimensions and is disposed in the central and inner portions of the tyre sections formed of solid blocks of rubber, preferably of spherical shape, so that the portions of the sections surrounding the fixing device are caused to automatically grip the latter on all sides with great pressure, for the purposes described. 25

2. An elastic tyre as specified in Claim 1, wherein the part of the fixing device projecting outside the wheel felloe is set at an angle such that the centre line of the fixing device will meet the ground at right angles in the forward revolution of the wheel.

3. An elastic tyre as claimed in any one of the preceding claims, wherein 30 the fixing device is mounted elastically in the wheel felloe.

4. The improved elastic tyre constructed and operating substantially as hereinbefore described and also as illustrated in and by the accompanying drawings.

Dated this 5th day of June, 1912.

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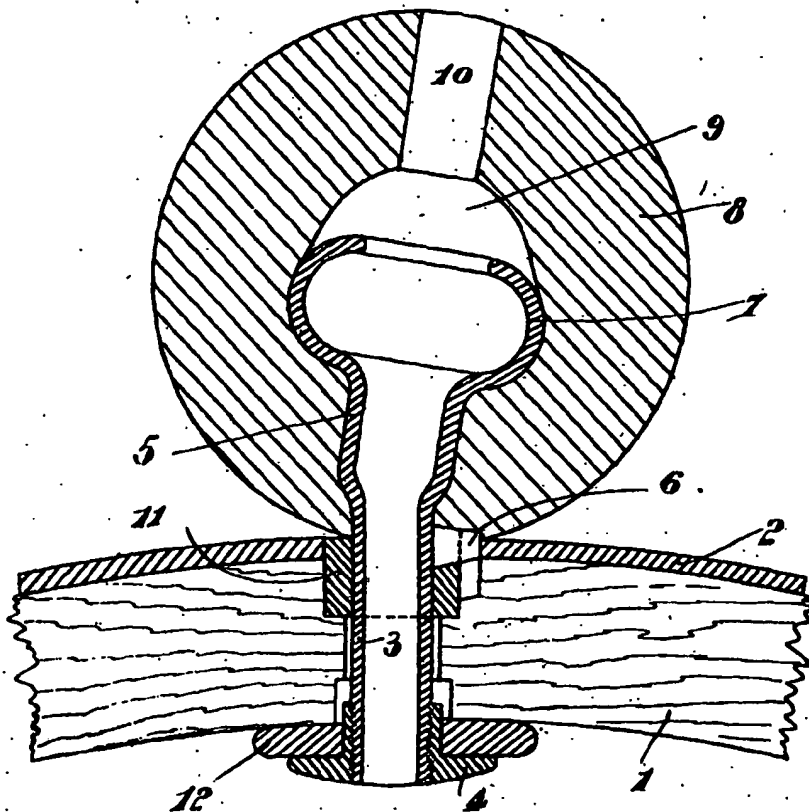
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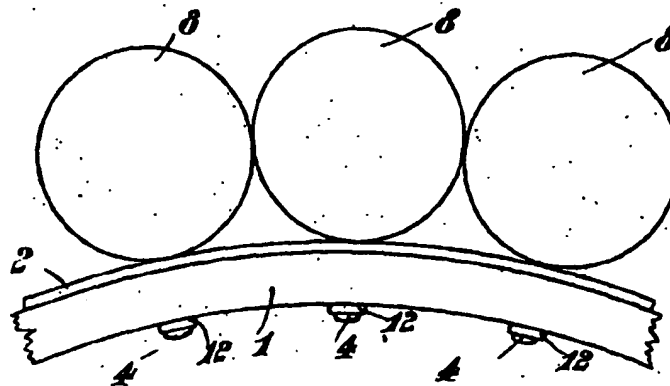
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*Fig. 1.*



*Fig. 2.*



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